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Robert Michael Stewart

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EXAMINER

BERMAN, SUSAN W

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No. 09/940,494	Applicant(s) STEWART ET AL	
Examiner Susan W Berman	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of the communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-22 is/are pending in the application.
- 4a) Of the above claim(s) 2-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-6 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1) ☒ Certified copies of the priority documents have been received.  
 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

*Election/Restriction*

Applicant's election of Group I, claims 1-8, in the Paper received 12-09-2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

*Drawings*

The corrected drawings filed 12-09-2003 overcome the objections to the drawings set forth in the previous office action.

*Response to Amendment and Arguments*

Claim 2, as amended, requires a coagulation temperature in the range from 30 to 90 °C.

Applicant's arguments defining the differences between the disclosure of Hawkes et al are persuasive and the rejection of claims over Hawkes et al in view of Forster et al is withdrawn.

Applicant argues that Giurak et al do not disclose a conveyor belt. This argument is not persuasive because the claims do not recite the use of a conveyor belt. Giurak et al disclose a coagulator means, as required in the instant claims, but do not mention heating by microwave energy. Giurak et al teach drying but do not mention microwave drying.

It is agreed that Argy et al disclose microwave energy for heating in a drying process after coagulation. Applicant argues that the process of Argy et al cannot use a continuous stream of rubber latex on a conveyor belt. The rejection of claims over Argy et al is withdrawn.

New grounds of rejection are set forth herein below.

*Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as obvious over Giiurak et al (4,303,569) in view of Mork et al (6,299,808) and Forster et al (3,771,234). Giiurak et al disclose a continuous process for coagulation of a latex in a tubular coagulation means by heating a coagulant stream to a temperature from 50 to 80 °C. Giiurak et al teach that the coagulation temperature is controlled by providing the necessary heat to the coagulant stream. The coagulated mixture is passed to a conduit equipped with an impingement plate and then to a means for separation, recovery and drying. See column 1, lines 53-68, column 3, lines 26-42 and column 6, line 62, to column 7, line 5. Giiurak et al teach using steam (hot air) to heat the coagulant but do not mention using a combination of microwave energy and hot air for heating the latex stream in the coagulator.

Mork et al disclose a continuous process for polymerizing, curing and drying high internal phase emulsions. See the Abstract, column 3, line 65, to column 4, line 10, column 4, lines 47-61, column 6, lines 39-41, column 7, lines 47-57, column 8, lines 4-63. Forster et al disclose a microwave drying process for synthetic polymers, such as a rubber latex. The drying process is by a pneumatic conveyor resonating cavity wherein a first resonating cavity operates at a microwave frequency of about 600 to about 50,000 MHZ and a second resonating cavity operates at a microwave frequency of 2,450 MHZ. See column 6, lines 1-6 and lines 60-65, column 7, lines 5-43, and Example 1. Forster et al teach that the volatile content of nonpolar materials can be reduced to below the detectable limit of 1 ppm by continuous drying using microwave heating while conveying the material to be dried in a pneumatic conveyor (column 3, lines 35-44). Forster et al teach that the drying technique disclosed is suitable for any latex polymerization process (column 5, lines 51-59, and column 6, lines 25-28). The difference from the instantly claimed process is that Forster et al do not teach heating the latex stream in a coagulator by a combination of microwave energy and hot air before drying.

It would have been obvious to one skilled in the art at the time of the invention to employ the continuous process disclosed by Mork et al for heating the coagulant in the process taught by Giiurak et

Art Unit: 1711

al. Giurak et al provide motivation by teaching that the coagulation temperature is controlled by providing the necessary heat to the coagulant stream. Mork et al teach that a microwave oven can be employed to provide heat in an analogous process. It would further have been obvious to one skilled in the art at the time of the invention to employ the process disclosed by Mork et al wherein a microwave oven is selected as heat source from the heat sources taught by Mork et al as being equivalent for the polymerization by heating or for the drying by heating step. It would have been obvious to one skilled in the art at the time of the invention to employ the microwave drying process taught by Forster et al in the drying process taught by Giurak et al. Giurak et al teach that a drying step is employed after coagulation of the latex. Forster et al provide motivation to employ microwave heating for drying by teaching that the volatile content of nonpolar materials can be reduced to below the detectable limit of 1 ppm by continuous drying using microwave heating while conveying the material to be dried in a pneumatic conveyor.

Claim 6 is rejected under 35 U.S.C. 103(a) as obvious over Giurak et al in view of Mork et al and in view of Forster et al (3,771,234), as applied to claims 2-5 above, and further in view of Collins et al (4,566,804). Collins et al teach that it is known in the art to employ computerized controls for controllable heating and drying of materials by microwave radiation. It would have been obvious to one skilled in the art at the time of the invention to employ controllable heating and drying of materials by microwave radiation employing computerized controls, as taught by Collins et al, in the process disclosed by Giurak et al. It would have been obvious to one skilled in the art at the time of the invention to employ controllable heating and drying of materials by microwave radiation employing computerized controls, as taught by Collins et al, to control temperature during the coagulation step in the process disclosed by Giurak et al. Giurak et al provide motivation to employ controllable heating by microwave radiation, as taught by Collins et al, by teaching that control of temperature is important in the disclosed

Art Unit: 1711

process for coagulation of a latex. It would have been obvious to one skilled in the art at the time of the invention to employ computerized controls to regulate the latex conveyor speeds, the temperature in the oven(s) and/or the microwave energy employed in the process, as taught by Collins et al.

*Allowable Subject Matter*

Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The cited prior art does not mention or suggest stretching a coagulated rubber stream or increasing the speed of conveyance from a coagulator to a dryer.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9306 for regular communications and 703 872 9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 272 1200.



Susan W Berman  
Primary Examiner  
Art Unit 1711